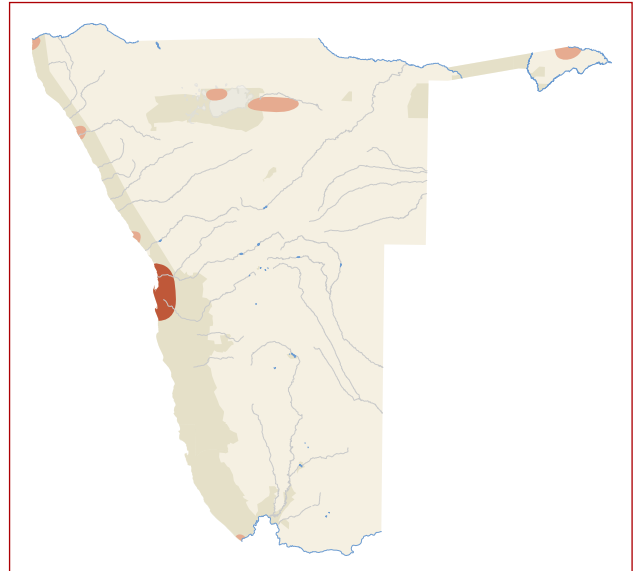
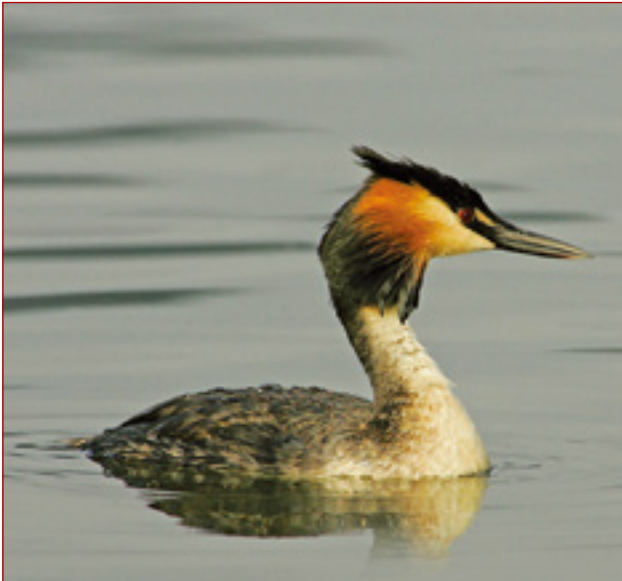


GREAT CRESTED GREBE | *Podiceps cristatus*

RE Simmons | Reviewed by: H Kolberg; LG Underhill

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Conservation Status:	Critically Endangered
Southern African Range:	Namibia, Botswana, South Africa (core)
Area of Occupancy:	7,600 km ²
Population Estimate:	70 birds, little breeding
Population Trend:	Declining
Habitat:	Sewage works, salt works and coastal brackish lagoons
Threats:	Habitat reduction through loss of coastal freshwater wetlands and modernisation of sewage works

Cape (Dean 1997a), with highest numbers recorded in the Wilderness lakes (274 birds) and de Hoop Vlei (180 birds, Taylor *et al.* 1999).

In Namibia, it is uncommon and has been reported regularly from only two locations – the Swakopmund (Mile 4) Saltworks (maximum 14 birds) and the artificial impoundments of the Walvis Bay Sewage Works, where a maximum of about 17 birds was known (K Wearne pers. obs.) but from where it has disappeared, possibly when the ponds were moved in 2006 (Kolberg 2010). It is also occasionally found in small numbers at various localities throughout Namibia, such as Fischer’s Pan in Etosha National Park and the Orange River mouth. Formerly, it was also regularly found at Sandwich Harbour when the freshwater wetland was much larger (Berry & Berry 1975). Elsewhere, it is rare and vagrant in Namibia at the Kunene and Hoanib river mouths, Cape Cross, Etosha Pan, the Omadhiya lakes and furthest north on the Zambezi River (Dean 1997a, Jarvis *et al.* 2001).



DISTRIBUTION AND ABUNDANCE

The subspecies *P. c. infuscatus* is one of three in the old world, and is confined to Africa. It occurs discontinuously through Africa, with small pockets in Ethiopia, the high altitude Rift Valley Lakes of East Africa, then disappears completely before re-appearing in southern Africa (del Hoyo *et al.* 1992). Everywhere it is relatively rare, only occurring together in flocks in one or two areas such as salt works and dams, but never to the extent that Black-necked Grebes *P. nigricollis* occur. Its core area in South Africa is the Mpumalanga highveld and the Western

The population of the African subspecies is estimated at less than 10,000 birds (Dodman 2002), but this may be optimistic for a number of reasons. The Namibian wetland counts, covering 80 wetlands, and South African Co-ordinated Waterbird Counts (CWAC), covering 270 sites, account for a mean of 897 birds and a maximum of 1,937 birds (calculated from Taylor *et al.* 1999, Jarvis *et al.* 2001). Such counts do not cover all wetlands, however. Allan *et al.* (1995) estimate that there are about 7,600 pans with an area greater than one hectare in the core

South African highveld, and grebes occur on about 18% of them (about 1,368 pans). If the average number of grebes is approximately 7.7 per wetland (data from CWAC 2004 counts, M Wheeler unpubl. data), this gives an estimate of about 11,000 grebes. This is probably an overestimate however, as it does not account for the fact that grebes prefer larger, clear-water pans that are undisturbed (Clinning 1995). In Botswana, the sum of maximum counts is 193 birds from nine wetlands counted between 1990 and 2001 (Tyler 2001). The population of Great Crested Grebes in southern Africa thus ranges between 2,000 to 11,000 birds, and probably numbers around 7,000 birds.

A possible decline is suggested from the disappearance of the Great Crested Grebe from some artificial water bodies, such as Witwatersrand dams (Clinning 1995) and its gradual disappearance from Namibian localities, such as Walvis Bay and Sandwich Harbour (Simmons 1991, Jarvis *et al.* 2001, K Wearne, H Kolberg unpubl. data). It is also said to have disappeared from East African lakes since the 1950s with the advent of gill nets (del Hoyo *et al.* 1992).

The Namibian population is unlikely to be more than 80 birds, with an average of three birds occurring at 'Bird Paradise', the old sewage works of Walvis Bay (but not recorded there since 2001), up to 12 birds at the Walvis Bay Ramsar site (average three birds; not recorded there since 2006), and nine birds at Swakopmund Salt Works (average eight birds; last recorded in 2010) over the period 1977 to 2012 (Wearne & Underhill 2005, H Kolberg unpubl. data). The sum of maximum counts from this period for all sites was 77 birds, with the highest maximum (50 birds) from a 1977 count of Sandwich Harbour (Whitelaw *et al.* 1978).



ECOLOGY

The Great Crested Grebe prefers permanent and clear freshwater wetlands, inland dams, pans, and sewage works (Taylor *et al.* 1999). At the coast, it is found in brackish wetlands where freshwater emergent vegetation is found. It feeds almost entirely on small fish, but also on water insects, crustaceans and tadpoles (Dean 2005c). It breeds early in the year, with Namibian egg laying in November (two records), December (three), January (one), February (three), March (one) and May (one) (Brown *et al.* 2015). Clutch and brood size are poorly known, but appear to be smaller (average clutch size 1.7 from seven nests) than recorded elsewhere (clutch size 3.1 to 3.6: Dean 2005c, 3 to 4: Tarboton 2011); five recorded broods averaged 1.8 young (Jarvis *et al.* 2001, R Braby pers. obs.).



THREATS

This species has suffered from natural and man-made habitat reductions in Namibia. At Sandwich Harbour, the

progressive disappearance of the northern freshwater wetland (Berry & Berry 1975, Simmons 1991), a natural and possibly cyclical phenomenon, has seen a decline from a maximum of 40 grebes in the northern wetland alone in the early 1970s (Berry & Berry 1975) and 50 birds in 1977 for the entire Sandwich Harbour wetlands (Whitelaw *et al.* 1978) to a maximum of 13 between 1990 and 2001 (Simmons 1991, Jarvis *et al.* 2001). Only single birds have been observed there until 2011 and none since then (H Kolberg unpubl. data). At Walvis Bay, the sewage works have now been replaced by a more modern facility and the few breeding birds that were there have left (K Wearne pers. obs.); non-breeding birds now sporadically occur in the Walvis Bay Salt Works impoundments. In dams in South Africa, the Great Crested Grebe appears to be very sensitive to water pollution and eutrophication, and has disappeared from those dams where water sports are common (Clinning 1995), as well as from the Wilderness lakes complex (RE Simmons pers. obs.).



CONSERVATION STATUS

This subspecies is classified as *Critically Endangered* because of its small Namibian population of fewer than 100 birds, loss of habitat, and its disappearance from the Walvis Bay sewage ponds and Sandwich Harbour. It should be given *Specially Protected* status in Namibia. Its population size in southern Africa is small but healthy, and it often occurs on artificial dams and sewage works. There has been no historical reduction in population size (Dean 1997a, Tyler 2001), although local reductions have been recorded in South Africa (Clinning 1995) and Kenya (del Hoyo *et al.* 1992). It is not classified as threatened in either South Africa (Taylor *et al.* in press) or globally (IUCN 2014), possibly because of its present subspecies status and large populations in Europe. The species (but not specifically the subspecies) is listed on Annex 2 of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA).



ACTIONS

Genetic studies are required to determine if its subspecific status in Africa and southern Africa is warranted. It is possible that three distinct species exist, given the geographic isolation from both the East African and European populations by large distances and lack of migration in southern Africa (del Hoyo *et al.* 1992, Dean 2005c). Success of breeding birds is poorly known in Namibia, but clutch and brood size are known to be small. Studies of its feeding and breeding habitat requirements could provide information on how other sewage works or impoundments might be altered and enhanced to provide habitat best suited for breeding grebes. Its presence at existing wetlands should be safeguarded by reducing disturbance and eutrophication of water bodies.